

Patent Claims:

1. An oligopeptide or polypeptide comprising
 - 5 (a) an amino acid sequence which has at least 94% identity with SEQ ID NO: 13;
 - (b) an amino acid sequence in which from 0 to 4 amino acids is/are substituted, deleted or inserted as compared with SEQ ID NO: 13;
 - 10 (c) an amino acid sequence which is a constituent sequence of SEQ ID NO: 12 containing at least 5 consecutive amino acids of SEQ ID NO: 12, with the constituent sequence including at least one of the positions 72, 78, 112, 122 and 139 of SEQ ID NO: 12; or
 - 15 (d) a fragment of an HBs antigen of a hepatitis B virus, with the fragment having a length of at least 5 amino acids, the HBs antigen possessing arginine at position 115, glutamine at position 120, leucine at position 154, valine at position 164 and/or arginine at position 181 and the fragment comprising arginine 115, glutamine 120, leucine 154, valine 164 and/or arginine 181.
- 25 2. An oligopeptide or polypeptide as claimed in claim 1, characterized in that it reacts with sera from individuals who are infected with the hepatitis B variant HDB 05.
- 30 3. An oligopeptide or polypeptide as claimed in claim 1 or 2, characterized in that it comprises an amino acid sequence which is selected from the group consisting of SEQ ID NO: 12, SEQ ID NO: 13, SEQ ID NO: 14, SEQ ID NO: 15, SEQ ID NO: 16, SEQ ID NO: 17, SEQ ID NO: 18, SEQ ID NO: 19, SEQ ID NO: 20, SEQ ID NO: 21 and
- 35 SEQ ID NO: 22.
4. An oligonucleotide or polynucleotide comprising

- (a) a nucleotide sequence which has at least 98% identity with SEQ ID NO: 2,
- (b) a nucleotide sequence in which from 0 to 4 nucleotides are substituted, deleted or added as compared with SEQ ID NO: 2,
- (c) a nucleotide sequence which is a constituent sequence of SEQ ID NO: 1 containing at least 8 consecutive nucleotides of SEQ ID NO: 1, with the constituent sequence including at least one of the positions 218, 233, 335, 365 and 416 of SEQ ID NO: 1,
- (d) a nucleotide sequence which specifically hybridizes, under stringent conditions, with a polynucleotide which is complementary to the sequence SEQ ID NO: 1, or
- (e) a nucleotide sequence which encodes an oligopeptide or polypeptide as claimed in one of claims 1 to 3;
- or an oligonucleotide or polynucleotide which is complementary thereto.

5. An oligonucleotide or polynucleotide as claimed in claim 4, characterized in that it comprises a nucleotide sequence which is selected from the group consisting of SEQ ID NO: 1, SEQ ID NO: 2, SEQ ID NO: 3, SEQ ID NO: 4, SEQ ID NO: 5, SEQ ID NO: 6, SEQ ID NO: 7, SEQ ID NO: 8, SEQ ID NO: 9, SEQ ID NO: 10 and SEQ ID NO: 11.

6. An oligonucleotide or polynucleotide as claimed in claim 4, characterized in that it has a length of from 10 to 30 nucleotides.

7. A vector or plasmid which contains an oligonucleotide or polynucleotide as claimed in one of claims 4 to 6.

8. A cell which has been transformed or transfected with a vector or plasmid as claimed in claim 7.

9. A cell which contains an oligonucleotide or polynucleotide as claimed in one of claims 4 to 6 or a vector or plasmid as claimed in claim 7.

10. A method for preparing an oligopeptide or polypeptide as claimed in one of claims 1 to 3 which comprises culturing a cell as claimed in claim 8 or 9 under suitable conditions such that the oligopeptide or polypeptide is expressed.

11. The method as claimed in claim 10, characterized in that the oligopeptide or polypeptide is isolated from the cells and separated off from other oligopeptides or polypeptides.

12. An antibody which binds to an oligopeptide or polypeptide as claimed in one of claims 1 to 3.

13. An antibody as claimed in claim 12, characterized in that it binds to an HBs antigen which contains an oligopeptide or polypeptide as claimed in one of claims 1 to 3 but not, or significantly more weakly, to HBs antigen belonging to a genotype A, subtype adw, hepatitis B virus.

14. An antiidiotypic antibody which represents an amino acid sequence as defined in one of claims 1 to 3.

15. A test kit for detecting hepatitis B viruses, comprising

- (i) an oligopeptide or polypeptide as claimed in one of claims 1 to 3;
- (ii) an oligonucleotide or polynucleotide as claimed in one of claims 4 to 6; and/or

(iii) an antibody as claimed in one of claims 12 to 14.

16. An immunogenic peptide or mixture of immunogenic peptides containing one or more oligopeptides or polypeptides as claimed in one of claims 1 to 3 on its/their own or in combination with known HBV immunogens.

17. A method for detecting a hepatitis B antigen, characterized in that

- (a) a sample is incubated with an antibody as claimed in claim 12 or 13 under conditions which allow the formation of an antigen-antibody complex; and
- (b) an antigen-antibody complex which contains the antibody is detected.

18. A method for detecting antibodies which are directed against a hepatitis B antigen, characterized in that

- (a) a sample is incubated with an oligopeptide or polypeptide as claimed in one of claims 1 to 3 under conditions which allow the formation of an antigen-antibody complex; and
- (b) the antibody-antigen complex which contains the oligopeptide or polypeptide is detected.

19. A method for detecting a hepatitis B nucleic acid, characterized in that

- (a) a sample is incubated with an oligonucleotide or polynucleotide as claimed in one of claims 4 to 6 under conditions which allow the selective hybridization of the oligonucleotide or polynucleotide with a hepatitis B nucleic acid in the sample; and
- (b) it is determined whether polynucleotide duplexes which comprise the oligonucleotide or polynucleotide have been formed.

20. A method for detecting a hepatitis B nucleic acid, characterized in that

- 5 (a) a sample is incubated with at least one oligonucleotide or polynucleotide as claimed in one of claims 4 to 6 under conditions which allow the selective hybridization of the oligonucleotide or polynucleotide with a hepatitis B nucleic acid in the sample;
- 10 (b) a polymerase chain reaction is carried out; and
- (c) it is determined whether a nucleic acid has been amplified.

21. The use of an oligonucleotide or polynucleotide as claimed in one of claims 4 to 6 as a primer.

22. The use of an oligonucleotide or polynucleotide as claimed in one of claims 4 to 6 as a probe.

20 23. An isolated hepatitis B virus which possesses an HBs antigen which comprises an amino acid sequence having at least 97% identity with SEQ ID NO: 12.

BEST AVAILABLE COPY